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Science and Secrecy: Q and A at the Pentagon

The Reagan Administration is reported to be in the final stages of preparing regulations governing the circulation of scientific information that, though not classified, is declared to be "sensitive" for national security. To discuss the Defense Department's share in this longrunning exercise, SGR met for 75 minutes on April 7 with three key figures on the research side of the Pentagon—as distinguished from the avowedly hardlining policy side: Edith W. Martin, DoD Deputy Under Secretary for Research and Advanced Technology, and her subordinates, Leo Young, Director of Research and Technical Information, and Paris Genalis, Assistant Director, in Young's office, for Research and Laboratory Management. Martin chairs a panel on export controls on the DoD-University Forum, established to discuss policy issues concerning the Pentagon and academe, and is a key figure in the refashioning of DoD's interim directive 2040XX, which now governs dissemination of unclassified scientific data. Following are excerpts from the conversation, edited by SGR for brevity and clarity.—DSG:

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SGR. When will you produce rules or guidelines on export controls for the scientific and professional communities? Right now there's a lot of confusion out there.

Martin. Yes, there is. And there are a lot of people who have home-grown interpretations of what the policies are or how they feel this ought to take place, which is very harmful. We have tried to assure the research population that until they hear something, they should assume nothing. Be sensitive, but don't be paranoid. And we have been quite explicit in telling the defense contract monitors that they are not to interpret the policy and issue procedures to any of their potential contractors.

Young. You can't solve the problem by formula. There's no hard and fast solution. But what we're trying to do is sensitize people, both in the university community and within DoD itself, and the decisions then can be made by a lot of people who are closest to the technology, not by somebody in the Pentagon. Our job is to issue policy and guidelines, to provide some consistency and guidance.

SGR. Where are the guidelines?

Young. We're working on them.

SGR. You've been working on them for a long time. Defense has been studying this at least since the mid-1970s.

Martin. That this has been a perennial problem is something which we best not argue. But we have put more effort into it in a consolidated manner in the last three to four months than I feel has been done in the past.

Genalis. There's a national policy that's about to emerge from this, and therefore it would be premature for DoD to write down what it is we think, and then have the Office of Science and Technology Policy tell us how we should do it. Yes, we are working at it very hard; yes, we're getting ready to issue something...but we're also waiting for a Senior Interagency Group to tell

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Indirect Costs: How the Rates Vary from Campus to Campus—Page 7

In Brief

The Council of the American Physical Society had no business endorsing a nuclear freeze, says White House Science Adviser George A. Keyworth in the May issue of *Physics Today*, off the press in two weeks. Keyworth's testy response to the Council's recent endorsement of a recommendation by an APS panel is said to have gone through several moderating revisions before it was mailed off. A disciple of the Teller arm-to-the-teeth school of nuclear policy, Keyworth argues that the freeze endorsement violates an APS ban on political activity.

The National Science Foundation is still operating with a skeleton crew in its upper ranks while the search goes on to fill several natural and enforced departures that followed the arrival of Director Edward A. Knapp last November (SGR Vol. XII, No. 21). Latest word is that a search committee recently sent to the White House a short list of recommended candidates for the post of Deputy Director. No list yet, we're told, for three assistant directorships vacant or soon to be.

While the Reagan Administration profusely avows its affection for arms control, it has been cutting the innards out of the Arms Control and Disarmament Agency. Since Reagan took office, ACDA's staff has declined from 199 to 154, and 30 percent of its top positions are either vacant or filled on an acting basis. Meanwhile, the research budget has dropped from $4 million to $1.2 million.

...DoD May Not Wait for Presidential Plan

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how all the government ought to do this.

Martin. Ours will be in sync with that and will elaborate yet further in the defense context. But, timewise, I offer no estimates on when the presidential decision directive will be forthcoming. And I'm not entirely sure that we will wait until it's been issued.

Genalis. That will depend on the timing. If it turns out that it's going to be five years, we better issue something before that...

Martin. That's right. And if it is not issued at the time that we feel that it is ready to present, then it will be issued with a caveat.

"How the system works"

SGR. The Department will come out with its own guidelines if the interagency guidelines are delayed too long?

Martin. Not exactly. Understand that we are working with the interagency group, so we should have, as we're developing our guidelines, a fairly good feel for whether or not we're going to fall under the sanctioned umbrella of the policy guidance they're going to give us. And in the interest of responding to the needs of the Department of Defense and our contractors, we would have to generate something as soon as we can. If the presidential guidance is not out, then it would have to be with a caveat that this would be modified should any part of it not be consistent with the forthcoming presidential guidance.

Young. Bear in mind how the whole system works. You have OSD [Office of the Secretary of Defense], which oversees everything. Then you've got the Army, the Navy, and the Air Force, all of whom are independent companies, so to speak. And they make their own decisions to a large extent, unless we come in and say this is against our policy. So, what you have is national policy issued by the President, then the departments or agencies elaborate on that and make it more specific—in our case OSD. Then it goes to the Navy, let's say, and they make it more specific, and then it goes to a laboratory, and they interpret what the Navy has said. It's interpretation upon interpretation....What we have not done yet, because of the system in general, whoever it is, the Navy interprets all regulations, from procurement to export controls. We're saying export controls is a special problem and you need some additional guidance.

Martin. We will give top-down guidance.

Young. That's what we're getting at. So, first we have to organize the chain of command; 2040XX is a key component of that. If that works out the way we would like it to work out, it will provide that guidance.

Martin. What you're going to see in writing, in some months, is a revision of 2040XX, most likely. And that's going to set the big context for DoD. The statement for the DoD-University Forum essentially provides a commentary on the willingness of universities to work with us on controls, and gives some general feel for the parameters they feel are acceptable. It's not an official document, but...

SGR. How do you respond to the many people who say that with all your good intentions and serious efforts, you are essentially chasing a phantom and that you'll never come up with regulations that mean anything?

Martin. There are a lot of very experienced people who have made that statement, and when I look at people with a great deal of experience, I usually listen. I think that controls of this sort, as you indicated earlier, are something that we have pursued for a long time, with varying or maybe spotty success.

Sensitivity and Cooperation

SGR. There's the alleged hemorrhage of technology to prove it.

Martin. That's not overall. Maybe not all limbs are hemorrhaging. We are trying at this point to address the beast as it really exists. We're not trying to close all gaps—that's probably not possible or desirable. Much of what we hope to gain is not going to come out of some edict. It's going to come out of sensitivity and a desire to cooperate. We hope we will thwart, but we probably will not stop the illegal activities that are ongoing. We will thwart it because we have a smarter

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China Protests US Curbs on Space Equipment

The Reagan Administration's unending muddle over high-tech export controls has led to a nasty row with Chinese customers who claim we're selling them second-rate goods for commercial space applications.

The objects of China's protests are two ground stations for receiving weather and "remote sensing" data from satellites. The weather station has been delivered, but sources at the Commerce Department say China is unhappy with what it got and has taken the unusual step of asking for a new deal. The fate of the other station, which would give China its long-sought access to Landsat IV's Earth-imaging transmissions, now lies with the bickering keepers of America's technological riches at Commerce, the State Department, and the Pentagon. The station's labored passage through the twisting export licensing maze has already inflamed the Chinese, according to several US government officials, who expect more protests over the next few months.

China's quest for US-made ground stations began in 1979 when the two countries signed an agreement to speed high-technology eastward. High on the Chinese Academy of Sciences' list was a ground station that could receive and process photographs of crops, geological formations, and other natural and man-made resources taken by the Landsat IV satellite, launched last year. Landsat's "multi-spectral scanner" (MSS) can snap clear pictures of areas 80 metres square, while its "thematic mapper" (TM) is good for 30-square metre resolution.

China expected the best equipment available, but things got off to a bad start. China signed a contract for the station with Land Resources Management, Inc. Last year, before any cash changed hands, the Justice Department hauled LRM into court for selling sensitive technology to an eastern bloc country.

Another company, Systems and Applied Sciences Corp., took IRM's place in the China transaction. While SASC and Chinese officials drew up another contract, the US government was drawing up its own set of export guidelines for the arrangement.

China regards the guidelines as an "insult," say several US officials. Written last August by an interagency group overseeing export of sensitive US technology, the guidelines limit the sophistication of the ground station to "that which is essential for satisfactory operation and routine maintenance of the system."

Specifically, that means American technicians must deliberately degrade the computerized system that records and processes signals from the satellite. One day's data, gathered in a matter of minutes as the satellite passes over China, will require 18 hours or more

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Q&A *(Continued from page 2)*

customs department than we had before...a better system.

SGR. You've made references to the "system," but I don't get a sense that a system exists.

Young. First of all, we don't really have a focal point to whom cases can be referred to or appealed. There's a lot of us here in the Pentagon. There's a lot of people here. And 2040XX addresses that. Right now there's an interim 2040XX.

SGR. May I have a copy?

Young. Yes, you can.

Martin. You can, but I'd rather you didn't use that. I'd rather you'd wait.

Young. Let me put it this way. We, in this side of the house, don't completely agree with 2040XX. It's an interim document.

SGR. What's the other side of the house?

Young. It was issued out of Policy. This was Ikle's shop [Fred C. Ikle, Under Secretary of Defense for Policy].

Martin. But understand that it was issued out of Policy as an interim document, so they realize themselves that there was more to be done, and that being the case, they couldn't be totally satisfied with it themselves. So, I would rather not...

Young. But they did make a big step forward. It's not a perfect document....It does provide a focal point in DoD. It does not do it the way I would like, speaking for myself, at least, but the point is that if there is somebody there who has the responsibility, they then have to provide the guidance, do the education; it has to start from that point.

Martin. A lot more exists than I at first had anticipated. And part of what we are doing with this ad hoc committee is pulling all of that together. I don't want you to go away with the feeling that there is no system, because there is. What we are doing right now is making sure that it is concisely stated and that all of the pieces and relevant directives are available for reference, and I would say that 80 percent of what we need is there in one form or another, but it has not been consolidated heretofore, and will be.

Young. Any system requires judgment and depends on people. And that's the problem we really have to address.

Martin. Directives are just directives. They are not procedures.

...Irate at Better Treatment for India

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for processing. Spare recorders that back up the main recorders must be "hard-wired" so that Chinese engineers cannot tinker with or divert them. The Pentagon regards idle machine time as a playground for electronic espionage, according to trade-minded US government officials who declined to be named.

Most frustrating to the Chinese, says John McElroy, head of satellite data gathering at the National Oceanographic and Atmospheric Administration (NOAA), is a ban on "X-band tracking" equipment. Landsat sends it MSS images earthward on an "S-band" frequency, while its high-resolution TM signals go down on a higher, "X-band" frequency. China will be able to receive both, but first must find the satellite. The best way to do that is to track its X-band signal, but the guidelines forbid sale of this technology; some US spy satellites transmit on X-band. Instead, China must track with less sophisticated S-band equipment.

"Bitter at Whole Situation"

The Chinese objected, arguing that they needed X-band to track France's SPOT imaging satellite, to be launched in 1985. SPOT is arguably even more far-sighted than the thematic mapper. The US countered that it wasn't America's responsibility to worry about SPOT. However, Gilbert Weill, director of the Washington office of SPOT-Image, says the SPOT satellite can be tracked on S-band, which would make the whole argument moot. Nonetheless, says NOAA's McElroy, China is "very bitter about the whole situation...They feel like we gave them a commitment" to X-band tracking equipment when negotiations first began. "It's the peculiar status of China. On the one hand, we treat them as a semi-ally, but on the other hand we treat them as a Communist nation."

Especially galling to the Chinese, says one knowledgeable source at the State Department, is the no-strings-attached treatment other technology-seekers get. A businessman who has sold computerized equipment to the Chinese says they are miffed at the ease with which India, friendly with the Soviet Union, gets top-line equipment, while they, at odds with the Russians, get less. "They have been given every high-level [American] visitor over the past couple of years an earful" about the satellite deals, says the State Department source.

Part of the problem lies with the way licenses are granted. The meteorological ground station, which was paid for by the World Meteorological Organization, was delivered last February. A Washington-area company, P&P Industries, won out over international competition to provide the station. But both China and the WMO claim the technology doesn't live up to their expectations, says Reb Thomsen, P&P vice president.

Getting approval from the multi-layered export hierarchy was a "considerable problem," Thomsen says. In 1981, he said, "Commerce said, 'No sweat'," but as time passed the deal bogged down. Last year, Commerce came back to P&P with a list of restrictions, including one that forbade the sale of "source code" to China. Source code is the fundamental internal code of a computer from which other operating processes are derived. Instead, computers that run the weather station may only have "object code," a mid-level machine code that cannot be modified or reprogrammed—in effect, a "black box."

Thomsen says he doesn't know whether P&P is working with China to change the license that Commerce finally approved. But two officials at Commerce, who asked not to be identified, say China wants P&P to go after the source code.

US officials involved in the satellite deals agree that the schizophrenic nature of the export licensing system, with State and Commerce pushing to buy friendship with exports and the Pentagon wary of giving secrets away, confuses US companies and China alike. Bill Vest, Landsat manager at SASC, says his company is caught in the middle of a diplomatic test of wills. "China puts plenty of pressure on us" to get the best possible equipment, Vest recalls. "The Chinese want the technology so badly and it seems that the State Department wants to give it to them." Vest says he tried to run the contract by Commerce's reviewers for an informal look before filing the export license, but they refused to look at it.

Hard Bargaining Ahead

At the same time, companies are eager to sell to China, and the competition drives some to offer more than they can deliver. Alice Hogan, a Chinese-speaking official at NOAA, says, "The PRC tend to go for small companies who put in the lowest bids, who have grown up around government, and haven't had a lot of international experience. They don't know how to write a license and they don't know the system." A State official agreed, adding that companies trying to please the Chinese "operate at the margins" of technology that the Pentagon considers too sensitive to sell.

Chinese officials were unavailable for comment. It is commonly known, however, that SASC's application, submitted last month, demands X-band tracking equipment. The word from State is that the US government stands by its rules. The scene appears set for a long summer of bargaining.—CJ

Britain: Science Gets Some Budgetary Cheer

London. The financially induced gloom that has pervaded British science for the past few years seems to be lifting a bit this spring as the result of a budget that will at least keep pace with inflation.

Particularly gratifying for the hardpressed universities is the decision by Sir Keith Joseph, the Science and Education Minister, to slow the graying of academe by providing funds for hiring 700 young staff members, starting with 230 next year. The cost for that first batch will be about $8 million, and the sum is indeed welcome, since the universities are midway through a three-year budget-reduction scheme that will cut their direct government support by approximately 15 percent.

The hiring process will be somewhat different from usual, however, since the government is insisting on a larger role for the UK's five research councils, the agencies which dispense government research funds to the universities. Though each university will have the final say in filling these new posts, the councils will get into the process by defining areas of need and allocating the jobs to selected departments. The procedure amounts to a symbolic rap on academe's knuckles for the way it has managed its staffing during the long austerity. By enlarging the role of the councils, the government, in effect, is expressing its preference for their tradition of peer review and, what some would consider, more businesslike procedures. But that seems to be as far as the government will go in tinkering with the venerable "dual-support" system, under which the universities finance staff and laboratories, while the research councils provide support, of limited duration, for specific projects.

Emphasis on Computers

In the UK, as elsewhere, computer research, manufacture, and applications have become an obsessive concern of the government's industrial policymakers, and here, too, the universities will benefit. The Ministry of Education and Science plans to spend about $19 million this year on staff and equipment to teach 1000 postgraduate and other senior students and 1000 undergraduates in the booming field of "information technology."

The budget that has been announced for the five councils for the year running 1983-84 amounts to about $750 million, an increase of nearly $60 million over the previous level. That's no great sum by American standards, even on a proportional basis, but given the austerity that has long prevailed here, the budget has been favorably received in scientific ranks.

Plans for making additional funds available to the research councils are described in the 1982 edition of "The Science Budget: A Forward Look," which is supposed to spell out the inner thoughts of the Advisory Board for the Research Councils, the body that coordinates the work of the five councils and advises the Minister of Education and Science on how the money should be divided. In a turnabout from the custom of keeping policy differences out of public view, the Board itself pressed for publication of the "Forward Look" to publicize its disagreement with Minister Joseph's preference for killing the Social Science Research Council (SSRC). Though the Minister has been in pursuit of that goal for 18 months, the SSRC got off with a token cut.

Aid for Medical Research

The Science and Engineering Research Council (SERC), which is to receive a bonus of some $8 million from the new research budget, is, of course, heavily engaged with information technology; SERC estimates expenditures of approximately $75 million for fundamental research in this area over the next five years. And the new biotechnology directorate, which is supposed to coordinate research and industrial innovation, will also receive additional support.

The Medical Research Council is establishing a five-year program to provide grants of about $72,000 apiece for exceptional, university-based biomedical research groups that are in financial difficulty. Among the research areas to be assisted are cancer, hypertension, NMR imaging, prenatal medicine, diabetes and multiple sclerosis.

The Natural Environment Research Council (NERC) has a bit of controversy on its hands as the result of an additional $7 million it has received to expand the British Antarctic Survey—which has benefited from post-Falkland efforts to boost British influence in the region. Other key topics for NERC are deep geology, oceanography, forestry, aquatic organisms, and atmospheric sciences.

The main exception to this happy pattern of growth is to be found in agriculture, which, ironically, is one of the very few areas in the UK economy which has demonstrably benefited from research. Atop earlier cuts that will necessitate a loss of 70 scientists, the spending plan for the Agricultural Research Council calls for still another reduction, though this one will be small. Food processing research has been identified as a potential area of growth, if the Council sets up a directorate for that subject.

Meanwhile, the research councils are being examined by a working party set up by the Department of Education and Science to look at the relationship between the research conducted inhouse and in universities. Shrouded in secrecy, which is the custom here for such under-

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...Academics Envy Funding of Government Labs

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takings, the working party is headed by Richard Morris, Chairman of the UK branch of the Brown and Root engineering firm. One of the more interesting items it will be pondering is why only 34 percent of the Science and Engineering Research Council's funds go into universities, while the balance goes to international research facilities, such as CERN, and the provision of central research facilities in the UK.

As might be expected, there is considerable resentment among academics at the apparently privileged existence led by the quasi-civil-servants who work with job security and usually substantial funding in the research council laboratories. In contrast, those in academe usually have to assemble bits and pieces of financial support and supplies to carry on their research. The working party will also be looking into why the main thrust of agricultural research remains outside the universities and centered in the Agricultural Research Council's own labs.

The Chairman of the Advisory Board for the Research Councils, Sir David Phillips, is a member of the working party. The report is due this month.

Commercial Thrust

Also coming along soon is a shift in the rules governing commercial exploitation of research performed in universities. Up to now, industrial use of ideas that originated in research financed by the councils has had to be channeled through the National Research Development Corporation (NRDC), a government-spawned organization whose efforts to promote industrial innovation are not well regarded by industrialists or academics. Both groups view the organization as a hinderance rather than a dynamic booster of new technology. Their feelings have apparently influenced the Science and Engineering Research Council, which has successfully lobbied to allow academic researchers to go directly to industry for development of their marketable ideas. The change is likely to have the greatest effects in biotechnology and information technology, where academics are well aware of the commercial values of their skills.

A great boost for the morale of researchers in computer sciences and related fields was provided last autumn through the publication of a report commissioned by the Department of Industry's Information Technology Minister, Kenneth Baker. Prepared by a committee headed by John Alvey, Director of Technology for British Telecom, the report called for a scheme along the lines of Japan's celebrated "fifth generation" computer program, and recommended combined government-industry expenditures of approximately $500 million on four major themes: software engineering, man-machine interface, intelligent knowledge-based systems, and very-large-scale integration. It was recommended that government laboratories—including defense facilities, which lead the electronics field in the UK—should collaborate with the research councils and industry.

Technology Policy Coming?

The report, on which no action has yet been taken—there has not even been a formal statement of government intentions—reflects a growing interest here in the development of some kind of national technology policy. As was pointed out in a recent report by the House of Lords Select Committee on Science and Technology, "The option of letting industries grow and contract in an international free market without any associated government policy is no longer open." The Committee report added that "the government should now carry strategic thinking forward by designating certain sectors and technologies on which they should encourage industry to concentrate over a 10 to 15 year period. This strategy should identify priority areas for the immediate future and areas for long-term exploitation."

The Lords' report also bemoans the relatively low level of support for research in the civil sector and recommends a two-to-three-fold increase to bring the UK into line with the leading western industrial nations. It also recommends that the bulk of the money should go straight into industry and not be channeled through the government's own research establishments, which it suggests are poorly equipped to respond to industrial needs.

While, as with all select committee reports, the Lords' recommendations are purely advisory, there are signs that the government is already thinking along similar lines. The key people in this regard are Robin Nicholson, Chief Scientific Adviser in the Central Policy Review Staff, which is the government's principal "think tank," and Sir Henry Chilver, Chairman of the Advisory Council on Research and Development. The two have apparently convinced an ostensibly laissez-faire Tory government that there is an overwhelming case for a national strategy for science and technology.

In ordinary circumstances, it might be expected that these relatively obscure matters of science policy might be put off until after the elections—date not yet set, but obviously in the mill. However, it is noted with interest that in both the US and France, there seems to be considerable political mileage in boosting science. Who knows? It could become a political issue here, too.—RH

Indirect Costs, Part I: Campus-by-Campus Rates

One of the most friction-ridden and inscrutable subjects in academic-government relations is indirect costs—the term for expenses incurred apart from those directly associated with the performance of government-supported research. These expenses, mainly for administration, maintenance and operations, and depreciation, have been an endless source of controversy involving federal budget cutters and university administrators, who generally want all they can get (SGR Vol. XIII, No. 6), and bench scientists, who think the front office is taking too big a cut for non-scientific activities. The cut does indeed amount to a great deal of money, as NIH Director James B. Wyngaarden noted last year in pointing out that "for each dollar of direct costs, 43 cents goes to indirect costs."

As SGR's non-partisan contribution to the discussion, we herewith offer some illuminating and rarely seen data—the indirect-cost rates of most of the major and minor recipients of federal research support. As can be seen, the rates tend to be higher for private than for public universities, a fact that our source attributes to more aggressive pursuit of federal largess by the private institutions.

The indirect-cost rates, which are used government-wide, are periodically computed by two government agencies, the Department of Health and Human Services, which covers 148 universities, and the Office of Naval Research, which handles 25 institutions, mostly universities. Starting with the HHS list, the following are the current rates for on-campus research:

Adelphi Univ.	50.0
Albany Medical College	60.0
American Univ.	59.0
Auburn Univ.	28.4
Baylor College of Medicine	38.0
Boston Univ.	79.6
Bowman Gray School of Medicine	34.1
Brandeis Univ.	80.0
Brigham Young Univ.	39.5
Clarkson College of Technology	58.1
Colorado State Univ.	38.8
Creighton Univ.	40.0
Dartmouth College	39.5
Drexel Univ.	65.0
Duke Univ.	50.0
Eastman Dental Center	60.0
Emory Univ.	50.0
Florida State	44.0
Georgetown Univ.	43.1
Harvard Univ., Main Campus	54.1
Indiana Univ. & Foundation	44.0
Iowa State Univ.	34.1
John Hopkins Univ.	50.1
Kansas State Univ.	31.0
LSU Medical Center	33.0
Medical College of Ohio	58.5
Medical Univ. of South Carolina	30.9
Memphis State	35.3
Michigan State Univ.	39.5
Mississippi State	30.0
Montana State Univ.	39.5
Mt. Sinai School of Medicine	49.0
New York Univ.	48.0
North Carolina State	40.0
Oakland Univ.	41.0
Oklahoma State Univ.	32.5
Oregon State Univ.	30.0
Portland State Univ.	36.0
Purdue Univ.	39.4
Rice Univ.	38.0
Rochester Inst. of Tech.	16.8
Rockefeller Univ.	62.4
RPI	58.0
South Dakota State Univ.	24.4
Southern Illinois Univ.	39.1
Southern Methodist Univ.	40.0
St. Louis Univ.	38.0
SUNY-Albany	46.9
SUNY-Binghamton	46.3
SUNY-Buffalo	49.2
SUNY-Downstate	54.6
SUNY-Stoneybrook	49.7
SUNY-Upstate	53.2
Temple Univ.	59.0
Texas A&M Univ.	36.0
Texas Tech Univ.	30.0
Texas Tech Univ. HSC	35.0
Thomas Jefferson Univ	74.0
Univ. of Akron	42.0
Univ. of Alabama, Tuskaloosa	42.3
Univ. of Arkansas	32.0
Univ. of Arkansas Med. Sc.	32.0
Univ. of California, LA	38.7
Univ. of California, San Diego	33.1
Univ. of California, Berkeley	41.9
Univ. of California, SF	27.2
Univ. of California Davis	36.8
Univ. of California Irvine	39.5
Univ. of California, Riverside	37.6
Univ. of California, Santa Barbara	39.4
Univ. of California, Santa Cruz	45.1
Univ. of Cincinatti	40.1
Univ. of Colorado HSC	27.0
Univ. of Connecticut	49.8
Univ. of Florida	47.0
Univ. of Georgia RF	38.1
Univ. of Houston	37.0
Univ. of Idaho Agri. & For. St.	27.5
Univ. of Kansas	35.7
Univ. of Kentucky, Main Campus	49.5
Univ. of Kentucky, Med. Ctr.	49.6
Univ. of Louisville	49.6

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Academy Proceeding with Plans for Journal

The National Academy of Sciences is moving ahead with plans to publish a policy journal, though several major items remain to be settled, among them the title.

The journal, long under consideration at the NAS, had tentatively been titled *The Journal of Science Policy,* but this wasn't too well received by the subordinate but increasingly powerful National Academy of Engineering, which wanted "technology" in the title. The matter remains under study while a $50,000 marketing survey is carried out. But it now appears reasonably certain that a "go" decision will be made. A search is underway for an editor and preparations are being made for a prototype issue.

Five Named to Defense Board

Five new members have been appointed to the Defense Science Board, the Pentagon's senior advisory group for science and technology. They are:

Elaine Bond, Senior Vice President, Corporate Systems, Chase Manhattan Bank

Frederick P. Brooks Jr., Chairman, Department of Computer Science, University of North Carolina

Vincent N. Cook, President, Federal Systems Division, IBM

Donald A. Hicks, Senior Vice President, Marketing and Technical, Northrup Corp.

Admiral Bobby R. Inman (ret.), former CIA Deputy Director, President and Chief Executive Officer, MCC Corp.

The Board is chaired by Norman R. Augustine, President, Martin Marietta Denver Aerospace.

S&T Coalition Opens Office

The National Coalition for Science and Technology, self-described as a "non-partisan advocacy organization to promote federal support" for those activities, has set up a Washington office and engaged a Capitol Hill staff veteran, Marc Rosenberg, as Executive Director.

The Coalition is both a descendant of, and, for tax purposes, becomes the parent of, the Science and Technology Political Action Committee—SCITEC-PAC— an election-campaign fundraising organization. Membership of the Coalition, about 500, consists mainly of persons in academe, industry and government.

Rosenberg spent 12 years as a Congressional aide, including three as Staff Director of the House Small Business Subcommittee on Energy, Environment, and Safety Issues Affecting Business.

The Coalition's address is Suite 615, 1201 16th St. Nw., Washington, DC 20036; tel. 202/822-7312.

8th Waterman Prize Awarded

Corey S. Goodman, 31, a developmental neurobiologist at Stanford University, has been named the eighth recipient of the annual Alan T. Waterman Award. The award, memorializing the founding Director of the National Science Foundation, is intended to honor and assist youngish researchers. It consists of a medal and a grant of up to $50,000 a year for three years of research and advanced study.

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